REMARKS

The claims have been amended to eliminate multiple dependencies. New claims 55 and 56 have replaced claims 37 and 50, respectively to place them in more proper format.

In view of the above, consideration and allowance are, therefore, respectfully solicited.

In the event that the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

Please charge any necessary fees or credit any overpayment to Deposit Account 22-0185.

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Respectfully submitted,

By _____

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Amendment filed with Demand.

CLAIMS

1. (Amended) A vinyl polymer having an alkenyl group of the following general formula (1) at at least one terminus of its main chain:

$-CH_2-C(R^1)(R^2)-O-R^3-C(R^4)=CH_2$ (1)

(wherein R^1 and R^2 are the same or different, and each represents a hydrogen atom or a univalent organic group; R^3 represents a divalent organic group having 1 to 20 carbon atoms and optionally containing one or more ether or ester bonds; R^4 represents hydrogen, an alkyl group having 1 to 10 carbon atoms, an aryl group having 6 to 10 carbon atoms, or an aralkyl group having 7 to 10 carbon atoms).

2. The polymer according to Claim 1 wherein the group R^3 is a divalent organic group represented by the following general formula (2):

$-C_6H_4-(CH_2)_n-$ (2)

(wherein C_6H_4 represents phenylene, and n represents an integer of 0 to 14).

3. The polymer according to Claim 1 wherein the group R^3 is a divalent organic group represented by the following general formula (3):

$-C(O)-R^5-$ (3)

(wherein R^5 represents a direct bond or a divalent organic group having 1 to 19 carbon atoms and optionally containing one or more ether or ester bonds).

4. The polymer according to Claim 3 wherein the group R^5 is a direct bond or a divalent organic group represented by the following general formula (4):

$-(CH_2)_n-$ (4)

(wherein n represents an integer of 1 to 19).

5. The polymer according to Claim 1, 2, 3 or 4, wherein its main chain is prepared by polymerizing a (meth)acrylic acid type monomer.

6. The polymer according to Claim 5 wherein the (meth)acrylic acid type monomer is an acrylic ester monomer.

7. The polymer according to Claim 5 wherein the (meth)acrylic acid type monomer is a methacrylic ester monomer.

8. The polymer according to Claim 6 wherein the acrylic ester is butyl acrylate.

9. The polymer according to Claim 1,2,3 or 4 wherein its main chain is prepared by polymerizing a styrene type monomer.

10. The polymer according to any one of Claims 1 to 9, wherein a ratio (Mw/Mn) of its weight average molecular weight (Mw) to number average molecular weight (Mn) as determined by gel permeation chromatography is not over 1.8.

11. The polymer according to any one of Claims 1 to 10, wherein its number average molecular weight ranges from 500 to 100000.

12. A vinyl polymer having a crosslinkable silyl group at at least one terminus of its main chain, which is prepared by adding a hydrosilane compound having a crosslinkable silyl group to the polymer according to any one of claims 1 to 11.

13. (Amended) A vinyl polymer having an alkenyl group of the following general formula (5) at at least one terminus of its main chain:

$-CH_2-C(R^1)(R^2)-C(R^6)(R^7)-R^8-C(R^9)=CH_2$ (5)

(wherein R^1 and R^2 are the same or different, and each represents

a hydrogen atom or a univalent organic group; R^6 and R^7 are the same or different, and each represents an electron-withdrawing group or one of them represents an electron-withdrawing group with the other representing hydrogen, an alkyl group having 1 to 10 carbon atoms, or phenyl; R^8 represents a direct bond or a divalent organic group having 1 to 10 carbon atoms and optionally containing one or more ether bonds; R^9 represents hydrogen, an alkyl group having 1 to 10 carbon atoms, an aryl group having 6 to 10 carbon atoms, or an aralkyl group having 7 to 10 carbon atoms).

14. The polymer according to Claim 13 wherein an electron-withdrawing group represents one group selected from the group consisting of $-CO_2R$ (in which R represents an alkyl group having 1 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms, or an aralkyl group having 7 to 20 carbon atoms), -C(O)R (R represents the same as mentioned above), and -CN.

15. The polymer according to Claim 13 or 14 wherein its main chain is prepared by polymerizing a (meth)acrylic acid type monomer.

16. The polymer according to Claim 15 wherein the (meth)acrylic acid type monomer is an acrylic ester monomer.

17. The polymer according to Claim 15 wherein the (meth)acrylic acid type monomer is a methacrylic ester monomer.

18. The polymer according to Claim 16 wherein the acrylic ester is butyl acrylate.

19. The polymer according to Claim 13 or 14 wherein its main chain is prepared by polymerizing a styrene type monomer.

20. The polymer according to any one of Claims 13 to 19,

wherein a ratio (Mw/Mn) of its weight average molecular weight (Mw) to number average molecular weight (Mn) as determined by gel permeation chromatography is not over 1.8.

21. The polymer according to any one of Claims 13 to 20, wherein its number average molecular weight ranges from 500 to 100000.

22. (Amended) A vinyl polymer having an crosslinkable silyl group of the following general formula (6) at at least one terminus of its main chain:

$$-CH_2-C(R^1)(R^2)-C(R^6)(R^7)-R^8-C(R^9)-CH_2-$$
$$[Si(R^{10})_{2-b}(Y)_bO]m-Si(R^{11})_{3-a}(Y)_a \quad (6)$$

[wherein R^1 and R^2 are the same or different, each represents a hydrogen atom or a univalent organic group; R^6 and R^7 are the same or different, each represents an electron-withdrawing group or one of them represents an electron-withdrawing group with the other representing hydrogen, an alkyl group having 1 to 10 carbon atoms, or phenyl; R^8 represents a direct bond or a divalent organic group having 1 to 10 carbon atoms and optionally containing one or more ether bonds; R^9 represents hydrogen, an alkyl group having 1 to 10 carbon atoms, an aryl group having 6 to 10 carbon atoms, or an aralkyl group having 7 to 10 carbon atoms; R^{10} and R^{11} are the same or different, each represents an alkyl group having 1 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms, an aralkyl group having 7 to 20 carbon atoms, or a triorganosiloxy group of the formula $(R')_3SiO-$ (R' represents a univalent hydrocarbon group of 1 to 20 carbon atoms and three Rs are the same or different) and when two or more R^{10} or R^{11} occur, they are the same or different; Y represents hydroxyl or a hydrolyzable group and when two or more Y occur, they are the same or different; a represents 0, 1, 2, or 3; b represents 0, 1, or 2; m represents an integer of 0 to 19, provided that $a+mb \geqq 1$].

23. The polymer according to Claim 22 wherein the electron-withdrawing group represents one group selected from the group consisting of $-CO_2R$ (in which R represents an alkyl group having 1 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms, or an aralkyl group having 7 to 20 carbon atoms), -C(O)R (R represents the same as described above), and -CN.

24. The polymer according to Claim 22 or 23 wherein its main chain is prepared by polymerizing a (meth)acrylic acid type monomer.

25. The polymer according to Claim 24 wherein the (meth)acrylic acid type monomer is an acrylic ester monomer.

26. The polymer according to Claim 24 wherein the (meth)acrylic acid type monomer is a methacrylic ester monomer.

27. The polymer according to Claim 25 wherein the acrylic ester monomer is butyl acrylate.

28. The polymer according to Claim 22 or 23 wherein its main chain is prepared by polymerizing a styrene type monomer.

29. The polymer according to any one of Claims 22 to 28, wherein a ratio (Mw/Mn) of its weight average molecular weight (Mw) to number average molecular weight (Mn) as determined by gel permeation chromatography is not over 1.8.

30. The polymer according to any one of Claims 22 to 29, wherein its number average molecular weight ranges from 500 to 100000.

31. (Amended) A method for preparing the vinyl polymer having an alkenyl group at a terminus of its main chain according to Claims 1 to 11, which comprises polymerizing a vinyl monomer

to obtain a vinyl polymer having a group of the following general formula (7) at at least one terminus of its main chain, and substituting an alkenyl-containing oxy anion of the following general formula (8) for the terminal halogen of said polymer:

$-CH_2-C(R^1)(R^2)(X)$ (7)

(wherein R^1 and R^2 are the same or different, each represents a hydrogen atom or a univalent organic group and X represents chlorine, bromine, or iodine);

$M^+O^--R^3-C(R^4)=CH_2$ (8)

(wherein R^3 represents a divalent organic group having 1 to 20 carbon atoms and optionally containing one or more ether or ester bonds; R^4 represents hydrogen, an alkyl group having 1 to 10 carbon atoms, an aryl group having 6 to 10 carbon atoms, or an aralkyl group having 7 to 10 carbon atoms; M^+ represents an alkali metal ion or a quaternary ammonium ion).

32. The method according to Claim 31 wherein M^+ represents sodium ion or potassium ion.

33. The method according to Claim 31 or 32 wherein said vinyl monomer is polymerized using an organohalogen compound or a sulfonyl halide compound as an initiator and a transition metal complex as an catalyst.

34. The method according to Claim 33 wherein the transition metal complex is a complex of one metal selected from the group consisting of copper, nickel, ruthenium and iron.

35. The method according to Claim 34 wherein the transition metal complex is a complex of copper.

36. The method according to Claim 31 or 32 wherein said vinyl monomer is polymerized using a chain transfer agent.

37. A method for preparing the vinyl polymer having a

crosslinkable silyl group at a terminus of its main chain according to Claims 12, which comprises adding a hydrosilane compound having a crosslinkable silyl group of the following general formula (9);

$$H-[Si(R^{10})_{2-b}(Y)_bO]m-Si(R^{11})_{3-a}(Y)_a \quad (9)$$

[wherein R^{10} and R^{11} are the same or different, each represents an alkyl group having 1 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms, an aralkyl group having 7 to 20 carbon atoms, or a triorganosiloxy group of the formula $(R')_3SiO-$ (wherein R' represents a univalent hydrocarbon group of 1 to 20 carbon atoms and three R's are the same or different) and when two or more R^{10} or R^{11} occur, they are the same or different; Y represents hydroxyl or a hydrolyzable group and when two or more Y occur, they are the same or different; a represents 0, 1, 2, or 3; b represents 0, 1, or 2; m represents an integer of 0 to 19, provided that $a+mb \geqq 1$]

to the vinyl polymer having an alkenyl group at at least one terminus of its main chain according to any one of claims 1 to 11.

38. (Amended) A method for preparing the vinyl polymer having an alkenyl group at a terminus of its main chain according to any one of Claims 13 to 21, which comprises polymerizing a vinyl monomer to obtain a vinyl polymer having a group of the following general formula (7) at at least one terminus of its main chain, and substituting an alkenyl-containing carbanion of the following general formula (10) for the terminal halogen of said polymer:

$$-CH_2-C(R^1)(R^2)(X) \quad (7)$$

(wherein R^1 and R^2 are same or different, and each represents a hydrogen atom or a univalent organic group and X represents chlorine, bromine, or iodine);

$$M^+C^-(R^6)(R^7)-R^8-C(R^9)=CH_2 \quad (10)$$

(wherein R^6 and R^7 each represents an electron-withdrawing group or one of them represents an electron-withdrawing group with

the other representing hydrogen, an alkyl group having 1 to 10 carbon atoms, or phenyl; R^8 represents a direct bond or a divalent organic group having 1 to 10 carbon atoms and optionally containing one or more ether bonds; R^9 represents hydrogen, an alkyl group having 1 to 10 carbon atoms, an aryl group having 6 to 10 carbon atoms, or an aralkyl group having 7 to 10 carbon atoms; M^+ represents an alkali metal ion or a quaternary ammonium ion).

39. The method according to Claim 38 wherein M^+ represents sodium ion or potassium ion.

40. The method according to Claim 38 or 39 wherein said vinyl monomer is polymerized using an organohalogen compound or a sulfonyl halide compound as an initiator and a transition metal complex as an catalyst.

41. The method according to Claim 40 wherein the transition metal complex is a complex of one metal selected from the group consisting of copper, nickel, ruthenium and iron.

42. The method according to Claim 41 wherein the transition metal complex is a complex of copper.

43. The method according to Claim 38 or 39 wherein said vinyl monomer is polymerized using a chain transfer agent.

44. (Amended) A method for preparing the vinyl polymer having a crosslinkable silyl group at a terminus of its main chain according to any one of Claims 22 to 30, which comprises polymerizing a vinyl monomer to obtain a vinyl polymer having a group of the following general formula (7) at at least one terminus of its main chain, and substituting a crosslinkable silyl-containing carbanion of the following general formula (11) for a terminal halogen of said polymer:

$-CH_2-C(R^1)(R^2)(X)$ (7)

(wherein R^1 and R^2 are the same or different, and each represents a hydrogen atom or a univalent organic group and X represents chlorine, bromine, or iodine);

$M^+C^-(R^6)(R^7)-R^8-CH(R^9)-CH_2-[Si(R^{10})_{2-b}(Y)_bO]_m-Si(R^{11})_{3-a}(Y)_a$ (11)

[wherein R^6 and R^7 are the same or different, and each represents an electron-withdrawing group or one of them represents an electron-withdrawing group with the other representing hydrogen, an alkyl group having 1 to 10 carbon atoms, or phenyl; R^8 represents a direct bond or a divalent organic group having 1 to 10 carbon atoms and optionally containing one or more ether bonds; R^9 represents hydrogen, an alkyl group having 1 to 10 carbon atoms, an aryl group having 6 to 10 carbon atoms, or an aralkyl group having 7 to 10 carbon atoms; R^{10} and R^{11} are the same or different, and each represents an alkyl group having 1 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms, an aralkyl group having 7 to 20 carbon atoms, or a triorganosiloxy group of the formula $(R')_3SiO-$ (R' represents a univalent hydrocarbon group of 1 to 20 carbon atoms and three R's are the same or different) and when two or more R^{10} or R^{11} occur, they are the same or different; Y represents hydroxyl or a hydrolyzable group and when two or more Y occur, they are the same or different; a represents 0, 1, 2, or 3; b represents 0, 1, or 2; m represents an integer of 0 to 19, provided that $a+mb \geqq 1$; M^+ represents an alkali metal ion or a quaternary ammonium ion].

45. The method according to Claim 44 wherein M^+ represents sodium ion or potassium ion.

46. The method according to Claim 44 or 45 wherein said vinyl monomer is polymerized using an organohalogen compound or a sulfonyl halide compound as an initiator and a transition metal complex as a catalyst.

47. The method according to Claim 46 wherein the transition metal complex is a complex of one metal selected from the group consisting of copper, nickel, ruthenium and iron.

48. The method according to Claim 47 wherein the transition metal complex is a complex of copper.

49. The method according to Claim 44 or 45 wherein said vinyl monomer is polymerized using a chain transfer agent.

50. A method for preparing the vinyl polymer having a crosslinkable silyl group at a terminus of its main chain according to any one of Claims 22 to 30, which comprises adding a hydrosilane compound having a closslinkable silyl group of the following general formula (9):

$$H-[Si(R^{10})_{2-b}(Y)_bO]_m-Si(R^{11})_{3-a}(Y)_a \qquad (9)$$

[wherein R^{10} and R^{11} are the same or different, and each represents an alkyl group having 1 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms, an aralkyl group having 7 to 20 carbon atoms, or a triorganosiloxy group of the formula $(R')_3SiO-$ (R' represents a univalent hydrocarbon group of 1 to 20 carbon atoms and three R's are the same or different) and when two or more R^{10} or R^{11} occur, they are the same or different; Y represents hydroxyl or a hydrolyzable group and when two or more Y occur, they are the same or different; a represents 0, 1, 2 or 3; b represents 0, 1 or 2; m represents an integer of 0 to 19, provided that $a+mb \geqq 1$]

to the vinyl polymer having an alkenyl group at at least one terminus of its main chain according to any one of Claims 13 to 21.

51. A curable composition comprising (a) the vinyl polymer having an alkenyl group at a terminus of its main chain according to any one of Claims 1 to 11 and (b) a

hydrosilyl-containing compound.

52. A curable composition comprising, as a principal component, the vinyl polymer having a crosslinkable silyl group at a terminus of its main chain according to Claim 12.

53. A curable composition comprising (a) the vinyl polymer having an alkenyl group at a terminus of its main chain according to any one of Claims 13 to 21 and (b) a hydrosilyl-containing compound.

54. A curable composition comprising, as a principal component, the vinyl polymer having a crosslinkable silyl group at a terminus of its main chain according to any one of Claims 22 to 30.